Relay Telescope, High Power Laser Alignment System, and Laser Peening Method and System Using Same

ABSTRACT

[0077] A laser system includes an optical path having an intracavity relay telescope with a telescope focal point for imaging an output of the gain medium between an image location at or near the gain medium and an image location at or near an output coupler for the laser system. A kinematic mount is provided within a vacuum chamber, and adapted to secure beam baffles near the telescope focal point. An access port on the vacuum chamber is adapted for allowing insertion and removal of the beam baffles. A first baffle formed using an alignment pinhole aperture is used during alignment of the laser system. A second tapered baffle replaces the alignment aperture during operation and acts as a far-field baffle in which off angle beams strike the baffle a grazing angle of incidence, reducing fluence levels at the impact areas.